TEMPERATURE OF THE AIR.

[In degrees Fahrenheit.]

The mean temperature is given for each station in Table II, for voluntary observers. Both the mean temperatures and the departures from the normal are given in Table I for the regular stations of the Weather Bureau.

The *monthly mean temperatures* published in Table I, for the regular stations of the Weather Bureau, are the simple means of all the daily maxima and minima; for voluntary stations a variety of methods of computation is necessarily allowed, as shown by the notes appended to Table II.

The *regular diurnal period* in temperature is shown by the hourly means given in Table V for 29 stations selected out of 82 that maintain continuous thermograph records.

The *distribution of the observed monthly mean* temperature of the air over the United States and Canada is shown by the dotted isotherms on Chart IV; the lines are drawn over the Rocky Mountain Plateau region, although the temperatures have not been reduced to sea level, and the isotherms, therefore, relate to the average surface of the country occupied by our observers; such isotherms are controlled largely by the local topography, and should be drawn and studied in connection with a contour map.

The *highest mean temperatures* were: In the United States, Key West, 70.3; Jupiter, 66.0; Los Angeles, 59.0; Yuma, 58.6; Port Eads, 57.7; Corpus Christi, 57.6. The lowest were: Moorhead, 14.6; Northfield, 17.9; Bismarck, 19.0; Williston, 19.6. In Canada the highest were: Esquimault, 42.6; Spences Bridge, 34.4; Yarmouth, 28.8. The lowest were: White River, 6.0; Battleford, 7.1; Prince Albert, 8.8.

As compared with the normal for December the mean temperature for the current month was in excess from the Appalachian range and west Gulf stations westward to the Pacific. It was deficient from southern Louisiana and Florida northeastward to Newfoundland. The greatest excesses were: Havre, 12.3; Swift Current and Helena, 12.2; Miles City, 12.1; Calgary, 11.9; Medicine Hat, 11.8. The largest deficits were: St. Johns, N. F., 5.4; Eastport, 4.9; Chatham and Columbia, S. C., 4.5; Albany and Augusta, 4.1; Northfield and New York, 3.7.

Considered by districts the mean temperatures of the current month show departures from the normal as given in Table I. The greatest positive departures were: North Dakota, 5.0; Missouri Valley, 6.1; northern Slope, 9.2; middle Slope, 6.2. The greatest negative departures were: New England, 2.8; middle Atlantic, 2.2; south Atlantic, 3.1.

The *years of highest and lowest mean temperatures* for December are shown in Table I of the REVIEW for December, 1894. The mean temperature for the current month was the highest on record at the following stations: Sacramento, 49.4; Fresno, 49.3; Port Angeles, 42.6; Rapid City, 37.8; Helena, 35.9; Baker City, 34.8; Miles City, 31.4. The mean temperature was the lowest on record at: Columbia, S. C., 44.0.

The *maximum and minimum temperatures* of the current month are given in Table I. The highest maxima were: 84, Los Angeles (3d); 83, Key West and Jupiter (9th), San Antonio (13th); 80, Tampa (8th), Corpus Christi (14th), Palestine (23d); 79, Shreveport (23d); 78, New Orleans (14th), Yuma (3d), San Diego (frequently). The lowest maxima were: 41, Moorhead (frequently), Sault Ste. Marie (11th), Idaho Falls (24th); 44, Huron (9th); 45, St. Paul (28th); 46, Duluth (10th), Bismarck (11th). The highest minima were: 58, Key West (17th); 46, San Diego (18th); 45, Point Reyes Light (7th); 44, Jupiter (23d). The lowest minima were: —27, Moorhead (1st); —26, Williston (2d); —23, Bismarck (2d); —22, Havre (2d); —21, Duluth (1st); —11, Huron and Miles City (2d); —10, Northfield (28th).

The *limits of minimum temperatures*, 32° and 40°, are shown by lines on Chart No. V.

The *years of highest maximum and lowest minimum temperatures* are given in the four last columns of Table I of the current REVIEW. During the present month the maximum temperatures were the highest on record at: Oklahoma, 75; Pueblo, 74. The minimum temperatures were not the lowest on record at any regular station of the Weather Bureau.

The *greatest daily range of temperature and the data for computing the extreme and mean monthly ranges* are given for each of the regular Weather Bureau stations in Table I. The largest values of the greatest daily ranges were: Pueblo, 50; Dodge City, Columbia, Mo., and Carson City, 43; Havre and El Paso, 42; San Luis Obispo and Fort Smith, 41; Hannibal, 40. The smallest values were: Pysht, 10; Tatoosh Island and Fort Canby, 11; Key West, 13; Pysht and Seattle, 16; Astoria and San Francisco, 17.

Among the *extreme monthly ranges* the largest were: Havre, 81; Rapid City, 73; Williston, 72; Bismarck, 69; Moorhead, 68; Duluth, 67; Miles City, 66; Pueblo, 64; Pierre and Sioux City, 63. The smallest were: Tatoosh Island, 17; Fort Canby, 21; Point Reyes Light and San Francisco, 22; Pysht, 24; Port Angeles, and Key West, 25.

The *accumulated monthly departures* from normal temperatures from January 1 to the end of the current month are given in the second column of the following table, and the average departures are given in the third column for comparison with the departures of current conditions of vegetation from the normal condition.

Districts.	Accumulated departures.		Districts.	Accumulated departures.	
	Total.	Average.		Total.	Average.
	°	°		°	°
Middle Atlantic	+ 3.7	+ 0.3	New England	— 1.1	— 0.1
South Atlantic	+ 5.6	+ 0.5	Florida Peninsula	— 9.2	— 0.8
East Gulf	+ 4.3	+ 0.4	North Dakota	—11.5	— 1.0
West Gulf	+14.5	+ 1.2	North Pacific	— 1.8	— 0.2
Ohio Valley and Tenn	+12.3	+ 1.0			
Lower Lake	+ 7.5	+ 0.6			
Upper Lake	+18.6	+ 1.6			
Upper Mississippi Valley	+16.9	+ 1.4			
Missouri Valley	+14.1	+ 1.2			
Northern Slope	+ 2.4	+ 0.2			
Middle Slope	+24.8	+ 2.1			
Abilene (southern Slope)	+26.3	+ 2.2			
Southern Plateau	+10.6	+ 0.9			
Middle Plateau	+ 5.0	+ 0.4			
Northern Plateau	+15.0	+ 1.2			
Middle Pacific	+ 0.6	+ 0.0			
South Pacific	+ 6.0	+ 0.5			

MOISTURE.

The *quantity of moisture* in the atmosphere at any time may be expressed by the weight of the vapor coexisting with the air contained in a cubic foot of space, or by the tension or pressure of the vapor, or by the temperature of the dew-point. The mean dew-point for each station of the Weather Bureau, as deduced from observations made at 8 a. m. and 8 p. m., daily, is given in Table I.

The *rate of evaporation* from a special surface of water on muslin at any moment determines the temperature of the wet-bulb thermometer; an evaporometer may be so constructed as to give the *quantity* of water evaporated from a similar surface during any interval of time. Such an evaporometer, therefore, would sum up or integrate the effects of those influences that determine the temperature as given by the wet bulb; from this quantity the *average humidity of the air* during any given interval of time may be deduced.

Measurements of evaporation within the thermometer shelters are difficult to make so as to be intercomparable at temperatures above and below freezing, and they may be replaced by computations based on the wet-bulb temperatures. The absolute amounts of evaporation from natural surfaces not protected from wind, rain, sunshine, and radiation are